REMARKS

Claims 15, 17, 18, 36-48 and 75-100 are pending in this application. Claims 17 and 18 have been amended, claims 49-74 have been cancelled, and claims 75-100 have been added by this Amendment. The claims have been amended to improve the form thereof, and not for reasons of patentability.

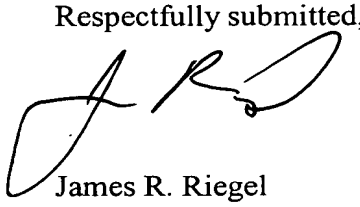
The Examiner rejected claims 49-74 under 35 U.S.C. 103(a) as being unpatentable over Bacon et al. in view of Engel et al. Applicant does not believe these claims to be obvious in view of these references, but to expedite prosecution, Applicant has cancelled claims 49-74 in the present application. Applicant therefore respectfully requests that the rejection under 103(a) be withdrawn.

The Examiner rejected claims 15-74 under the judicially-created doctrine of obviousness-type double patenting as being unpatentable over claims of U.S. Patent No. 6,128,006. To expedite prosecution, Applicant submits a terminal disclaimer herewith, and respectfully requests that the double patenting rejection be withdrawn.

The Examiner indicated that claims 15, 17, 18, and 36-48 are allowed. Applicant has added new claims 75-100, which include a method for providing a handheld remote control device and a handheld remote control device for interfacing a user's input with an electronic device and providing haptic feedback. These claims are believed patentable at least for similar reasons as claim 15.

Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,



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MARKED-UP VERSION OF AMENDMENTS

15. A handheld remote control device for adjusting a plurality of functions on at least one electronic device located remotely from said remote control device, said remote control device adjusting its tactile feel in accordance with a selected one of said plurality of functions selected by said user, the remote control device comprising:

a rotatable member shaped approximately like a wheel or knob, said rotatable member rotatably coupled to a housing of said remote control device and rotatable about an axis, said rotatable member manipulatable by a user;

a sensor coupled to said rotatable member, said sensor sensing a rotation of said rotatable member and providing data based on said rotation to said one or more electronic devices;

an actuator coupled to said rotatable member, said actuator outputting a computer-modulated force sensation on said rotatable member, said force sensation felt by said user; and

a controller coupled to said actuator and to said sensor, said controller modulating said actuator to create a force sensation upon said user that corresponds with said selected one of said functions.

17. (amended) A handheld remote control device as recited in claim 15 wherein said remote control device sends signals to said at least one electronic device using wireless transmission of information using an electromagnetic beam.

18. (amended) A handheld remote control device as recited in claim 15 wherein said at least one electronic device includes a video game console and wherein said remote control device includes a game controller for inputting signals to said video game console.

36. A handheld remote control device as recited in claim 15 wherein said plurality of functions include controlling a volume for audio output, selecting a received broadcast station or channel from multiple stations or channels, and scrolling through a list of selections.

37. A handheld remote control device as recited in claim 36 wherein said force sensation corresponding with controlling said volume for audio output includes a damping or friction sensation.

38. A handheld remote control device as recited in claim 36 wherein said force sensation corresponding with selecting said broadcast station or channel includes a detent or jolt sensation.

39. A handheld remote control as recited in claim 38 wherein detents or jolts of said detent or jolt sensation are spaced to correspond with a selection of particular stations or channels.

40. A handheld remote control device as recited in claim 36 wherein said force sensation corresponding with scrolling through a list of selections includes a spring return sensation.

41. A handheld remote control device as recited in claim 40 wherein said scrolling is achieved through an isometric control paradigm.

42. A handheld remote control device as recited in claim 15 wherein said controller can provide both isometric and isotonic interface paradigms to said user.

43. A handheld remote control device as recited in claim 15 wherein said controller assigns one of a plurality of different levels of simulated inertia to said rotatable member, said assigned level of inertial based upon said selected function.

44. A handheld remote control device as recited in claim 15 wherein said controller assigns detents with varying rotary spacing to said rotatable member, said assigned rotary spacing based upon said selected function.

45. A handheld remote control device as recited in claim 15 wherein said controller assigns hard stops at different locations within a range of travel of said rotatable member, said assigned location based upon said selected function.

46. A handheld remote control device as recited in claim 15 wherein said controller assigns different levels of simulated damping to said rotatable member, said assigned level of simulated damping based upon said selected function.

47. A handheld remote control device as recited in claim 15 wherein said controller assigns different levels of simulated friction to said rotatable member, said assigned level of simulated friction based upon said selected function.

48. A handheld remote control device as recited in claim 15 wherein said rotatable member can be depressed by said user, wherein depressing said rotatable member causes said selection to be made.

Please cancel claims 49-74 without prejudice.

Please add the following claims:

75. (new) A method for providing a handheld remote control device for manipulating a plurality of functions on at least one electronic device located remotely from said remote control device, said remote control device adjusting its tactile feel in accordance with a selected one of said plurality of functions selected by said user, the method comprising:

enabling a sensing of a position of a rotatable member shaped approximately like a wheel or knob, said member rotatably coupled to a housing of said remote control device and rotatable about an axis, and sending an indication of said position to said at least one electronic device, said rotatable member manipulatable by a user;

enabling an application of a computer-modulated force sensation on said rotatable member about said axis using an actuator coupled to said rotatable member, said user feeling said force sensation, wherein said force sensation corresponds with said selected one of said functions.

76. (new) A method as recited in claim 75 wherein a controller coupled to said actuator and to said sensor modulates said actuator to create said force sensation upon said user that corresponds with said selected one of said functions.

77. (new) A method as recited in claim 75 wherein said sending of said indication of said position to said at least one electronic device uses wireless transmission of information using an electromagnetic beam.

78. (new) A method as recited in claim 75 wherein said plurality of functions include controlling a volume for audio output, selecting a received broadcast station or channel from multiple stations or channels, and scrolling through a list of selections.

79. (new) A method as recited in claim 78 wherein said force sensation corresponding with selecting said broadcast station or channel includes a detent or jolt sensation, wherein detents or jolts of said detent or jolt sensation are spaced to correspond with a selection of particular stations or channels.

80. (new) A method as recited in claim 78 wherein said force sensation corresponding with scrolling through a list of selections includes a spring return sensation.

81. (new) A method as recited in claim 80 wherein said scrolling is achieved through an isometric control paradigm.

82. (new) A method as recited in claim 75 further comprising enabling a mode selection, said mode selection indicating an isotonic mode or an isometric mode for said rotatable member, wherein said force sensation applied to said rotatable member is different depending on said selected mode.

83. (new) A method as recited in claim 75 further comprising enabling the assigning of detents with varying rotary spacing to said rotatable member, said assigned rotary spacing based upon said selected function.

84. (new) A method as recited in claim 75 further comprising enabling the assigning of hard stops at different locations within a range of travel of said rotatable member, said assigned location based upon said selected function.

85. (new) A method as recited in claim 75 further comprising enabling the assigning of different levels of simulated damping to said rotatable member, said assigned level of simulated damping based upon said selected function.

86. (new) A method as recited in claim 75 wherein said rotatable member can be depressed by said user, wherein depressing said rotatable member causes said selection to be made.

87. (new) A method as recited in claim 75 wherein said force sensation is coordinated with an event occurring in a graphical environment implemented by said at least one electronic device, wherein said event is a scrolling of a displayed document as controlled by said sensed rotation of said rotatable member.

88. (new) A handheld remote control device for interfacing a user's input with an electronic device and providing haptic feedback, said handheld remote control device manipulating a plurality of functions on said electronic device and adjusting its tactile feel in accordance with a selected one of said plurality of functions selected by said user, the remote control device comprising:

a rotatable member shaped approximately like a wheel or knob, said rotatable member rotatably coupled to a housing of said remote control device and rotatable about an axis, said rotatable member manipulatable by a user;

a sensor sensing a rotation of said rotatable member and providing data based on said rotation to said electronic device;

an actuator outputting a computer-modulated force sensation on said rotatable member, said force sensation felt by said user; and

a processor in communication with said actuator, said processor controlling said actuator to create a force sensation upon said user that corresponds with said selected one of said functions.

89. (new) A handheld remote control device as recited in claim 88 wherein said actuator is a passive actuator.

90. (new) A handheld remote control device as recited in claim 88 wherein said actuator is an active actuator.

91. (new) A handheld remote control device as recited in claim 88 wherein said providing data to said electronic device uses wireless transmission of information using an electromagnetic beam.

92. (new) A handheld remote control device as recited in claim 88 wherein said electronic device includes a video game console and wherein said remote control device includes a game controller for inputting signals to said video game console.

93. (new) A handheld remote control device as recited in claim 88 wherein said plurality of functions include controlling a volume for audio output.

94. (new) A handheld remote control device as recited in claim 88 wherein said plurality of functions include selecting a received broadcast station or channel from multiple stations or channels.

95. (new) A handheld remote control device as recited in claim 94 wherein detents or jolts are output and spaced in said rotation of said rotatable member to correspond with a selection of particular stations or channels.

96. (new) A handheld remote control device as recited in claim 88 wherein said plurality of functions include scrolling through a list of selections.

97. (new) A handheld remote control device as recited in claim 96 wherein said scrolling is achieved through an isometric control paradigm having a spring return sensation.

98. (new) A handheld remote control device as recited in claim 88 wherein said processor enables two modes for said remote control device, said modes including an isotonic mode and an isometric mode for said rotatable member, wherein said force sensation applied to said rotatable member is different depending on which of said modes has been selected.

99. (new) A handheld remote control device as recited in claim 88 wherein said processor assigns force detents with varying rotary spacing to said rotatable member by controlling said actuator, said assigned rotary spacing based upon said selected function.

100. (new) A handheld remote control device as recited in claim 88 wherein said rotatable member can be depressed in said housing of said remote control device by said user, wherein depressing said rotatable member causes said selection to be made.